

IN THE CLAIMS:

Please amend the claims as follows:

Claim 1 (Currently Amended): An optical pickup device, comprising:

a lead frame package having a sub-mount, a laser source mounted on said sub-mount to emit a laser beam, a reflective element to reflect said beam onto a first path directly toward a transmission-type refraction grating, the transmission-type refraction grating is for dividing said beam into a plurality of beams including a main beam and two sub beams, which are incident to an optical medium, and a hologram optical element to diffract the beams reflected from an optical medium onto a second path, said lead frame package having an opening formed beside said laser source; and

wherein the opening is defined by the hologram optical element, the bottom of the lead frame package and the side walls of the lead frame package and communicates with an outside of the lead frame package; and

a detecting unit having a substrate and a photo detector mounted on said substrate, wherein said substrate is located external to said lead frame package and said photo detector is positioned in the second path to optimize the reception of diffracted beams from the hologram optical element;

wherein the detecting unit is disposed within the opening to move in a horizontal direction and a vertical direction and to rotate in a clockwise and counter-clockwise direction.

Claim 2 (Previously Presented): The device of claim 1, wherein said detecting unit is disposed at said opening of said lead frame package, said detecting unit fixed to said lead frame package after being moved to a position to receive said beams diffracted from said hologram optical element.

Claim 3 (Previously Presented): The device of claim 1, wherein said detecting unit is a chip-on-board photo diode package.

Claim 4 (Previously Presented): The device of claim 1, wherein said detecting unit is a flip-chip package.

Claim 5 (Previously Presented): The device of claim 1, wherein said reflective element is a mirror.

Claim 6 (Currently Amended): An optical pickup device, comprising:
a lead frame package having a sub-mount, a light source mounted on said sub-mount and emitting a laser beam, a transmission-type diffraction grating element dividing said beam into a main and two sub beams, which are incident to an optical medium, and a hologram optical element diffracting said beams reflected from said optical medium onto a diffraction path, said lead frame package having an opening formed beside said light source; ~~and~~

wherein the opening is defined by the hologram optical element, the bottom of the lead frame package and the side walls of the lead frame package and communicates with an outside of the lead frame package; and

a detecting unit having a substrate and a photo detector mounted on said substrate, wherein said substrate is located external to said lead frame package and said photo detector is positioned in the diffraction path such that the photo detector is optimally placed to receive the diffracted beams from the hologram optical element;

wherein the detecting unit is disposed within the opening to move in a horizontal direction and a vertical direction and to rotate in a clockwise and counter-clockwise direction.

Claim 7 (Previously Presented): The device of claim 6, wherein said detecting unit is disposed at said opening of said lead frame package, said detecting unit is fixed to said lead frame package.

Claim 8 (Previously Presented): The device of claim 6, wherein said detecting unit is a chip-on-board photo diode package.

Claim 9 (Previously Presented): The device of claim 6, wherein said detecting unit is a flip-chip package.

Claim 10 (Currently Amended): An optical pickup device, comprising:

a lead frame package having a sub-mount, a light source mounted on the sub-mount to emit a laser beam, a reflective element to direct said beam onto an optical medium, and a hologram optical element to diffract said beam reflected from said optical medium onto a diffraction path, said lead frame package having an opening formed beside said light source; and
wherein the opening is defined by the hologram optical element, the bottom of the lead frame package and the side walls of the lead frame package and communicates with an outside of the lead frame package; and

a detecting unit having a substrate and a photo detector mounted on said substrate, wherein said substrate located external to said lead frame package and said photo detector is positioned in the diffraction path to optimize the reception of diffracted beams from the hologram optical element;

wherein the detecting unit is disposed within the opening to move in a horizontal direction and a vertical direction and to rotate in a clockwise and counter-clockwise direction.

Claim 11 (Previously Presented): The device of claim 10, wherein said detecting unit is disposed at said opening of said lead frame package, said detecting unit fixed to said lead frame package.

Claim 12 (Previously Presented); The device of claim 10, wherein said reflective element is a reflection-type diffraction grating element dividing said beam emitted from said light source into a plurality of beams including main and two sub beams reflected toward said optical medium.

Claim 13 (Previously Presented); The device of claim 10, wherein said detecting unit is a chip-on-board photo diode package.

Claim 14 (Previously Presented); The device of claim 10, wherein said detecting unit is a flip-chip package.

Claim 15 (Previously Presented): The device of claim 10, wherein said reflective element is a mirror.

Claim 16 (Currently Amended): An optical pickup device, comprising:
a lead frame package having a sub-mount, a light source mounted on said sub-mount and emitting a laser beam which is incident to and reflected from an optical medium, and a hologram optical element diffracting said beams reflected from said optical medium onto a diffraction path, said lead frame package having an opening formed beside said light source; and

wherein the opening is defined by the hologram optical element, the bottom of the lead frame package and the side walls of the lead frame package and communicates with an outside of the lead frame package; and

a detecting unit having a substrate and a photo detector mounted on said substrate, wherein said substrate located external to said lead frame package and said photo detector is positioned in the diffraction path such that the photo detector is optimally placed to receive the diffracted beams from the hologram optical element;

wherein the detecting unit is disposed within the opening to move in a horizontal direction and a vertical direction and to rotate in a clockwise and counter-clockwise direction.

Claim 17 (Previously Presented): The device of claim 16, wherein said detecting unit disposed at said opening of said lead frame package, said detecting unit fixed to said lead frame package after being moved to a position at said opening to receive said beams diffracted from said hologram optical element.

Claim 18 (Previously Presented): The device of claim 16, wherein said detecting unit is a chip-on-board photo diode package.

Claim 19 (Previously Presented): The device of claim 16, wherein said detecting unit is a flip-chip package.

Claim 20 (Cancelled).

Claim 21 (Previously Presented): A process for manufacturing an optical pickup device, comprising the steps of:

providing a lead frame package having a sub-mount, a light source mounted said sub-mount and emitting a laser beam which is incident to and reflected from an optical medium, and a hologram optical element diffracting said beams reflected from said optical medium onto a diffraction path;

providing a detecting unit having a substrate and a photo detector mounted on said substrate, said substrate is located external to said lead frame package;

locating said detecting unit at an opening formed beside said light source of said lead frame package;

wherein the detecting unit is disposed within the opening to move in a horizontal direction and a vertical direction and to rotate in a clockwise and counter-clockwise direction; and

wherein the opening is defined by the hologram optical element, the bottom of the lead frame package and the side walls of the lead frame package and communicates with an outside of the lead frame package; and

moving said detecting unit with respect to said lead frame package into the diffraction path such that the photo detector is optimally placed to receive the diffracted beams from the hologram optical element; and

fixing said detecting unit to said lead frame package.

Claim 22 (Previously Presented): The process of claim 21, further comprising the steps of:

monitoring a signal obtained by said photo detector during movement of said detecting unit with respect to said lead frame package; and

fixing said detecting unit to said lead frame package when said signal is in a predetermined range.

Claim 23 (Previously Presented): The device of claim 10, wherein said reflective element is a reflection-type diffraction grating element that is mounted within the lead frame package.